CLAIMS

1. A method for transmitting wideband speech signals over a narrowband communication system, comprising:

generating a narrowband digital signal at a base station from a plurality of data packets received from a remote station, wherein the plurality of data packets carry a wideband speech signal;

puncturing the narrowband digital signal with the plurality of data packets;

transmitting the punctured narrowband digital signal over the narrowband communication system to a second base station;

separating the narrowband digital signal from the plurality of data packets at the second base station; and

forwarding only the plurality of data packets to a second remote station.

2. The method of Claim 1, wherein the puncturing of the narrowband digital signal occurs in the least significant bits of the narrowband digital signal.

3. The method of Claim 1, further comprising disabling a plurality of in-path equipment at the first base station and the second base station.

4. The method of Claim 3, wherein the plurality of in-path equipment comprise echo cancellers.

5. The method of Claim 3, wherein the plurality of in-path equipment comprise a decoding portion of a vocoder.

6. The method of Claim 1, further comprising the step of negotiating for tandem-free operations between the first base station and the second base station before the step of puncturing.

7. The method of Claim 1, wherein the narrowband digital signal is a pulse code modulated (PCM) signal.

8. A method for enhancing speech quality in a wireless environment, comprising:

transmitting a packetized wideband speech signal from a first remote station to a first base station;

converting the packetized wideband speech signal into a narrowband pulse code modulation (PCM) signal at the first base station;

negotiating between the first base station and a second base station for a tandem-free vocoder operation (TFO);

puncturing the narrowband PCM signal with the packetized wideband speech signal;

transmitting the punctured narrowband PCM signal to the second base station;

negotiating for wideband capability between the second base station and a second remote station;

receiving the punctured narrowband PCM signal at the second base station; and

discarding the narrowband PCM signal at the second base station and disabling a local vocoder at the second base station, whereupon the packetized wideband speech signal is forwarded to the second remote station.

9. A method for transparently switching between a wideband communication session and a narrowband communication session; comprising:

generating a narrowband signal at a first base station from a packetized wideband signal received from an originating terminal;

puncturing the narrowband signal with the packetized wideband signal;

transmitting the punctured narrowband signal from a first base station to a second base station;

establishing the wideband communication session between the second base station and a target terminal by extracting the packetized wideband signal from the punctured narrowband signal; and

if the wideband communication session is interrupted, then establishing the narrowband communication session between the second base station and the target terminal.

10. The method of Claim 9, wherein the wideband communication session is in a tandem-free mode.

11. The method of Claim 9, wherein the narrowband communication session occurs in a tandem vocoder mode, the method further comprising:

extracting the narrowband signal from the punctured narrowband signal; and

encoding the extracted narrowband signal for transmission to the target terminal.

12. The method of Claim 9, wherein the narrowband communication session occurs in a tandem-free mode, the method further comprising:

generating a packetized narrowband signal from the narrowband signal generated at the first base station; and

puncturing the narrowband signal with the packetized narrowband signal rather than the packetized wideband signal, whereupon the packetized narrowband signal is extracted from the punctured narrowband signal at the second base station.

13. The method of Claim 9, wherein the narrowband communication session occurs in a tandem-free mode, the method further comprising:

signaling the originating terminal to transmit a packetized narrowband signal;

transmitting the packetized narrowband signal from the originating terminal to the first base station;

generating the narrowband signal from the packetized narrowband signal; and

puncturing the narrowband signal with the packetized narrowband signal rather than the wideband signal, whereupon the packetized narrowband signal is extracted from the punctured narrowband signal at the second base station and a local vocoder is bypassed.

14. An apparatus for transmitting wideband speech signals over a narrowband communication system, comprising:

means for generating a narrowband digital signal at a base station from a plurality of data packets received from a remote station, wherein the plurality of data packets carry a wideband speech signal;

means for puncturing the narrowband digital signal with the plurality of data packets;

means for transmitting the punctured narrowband digital signal over the narrowband communication system to a second base station;

means for separating the narrowband digital signal from the plurality of data packets at the second base station; and

means for forwarding the plurality of data packets to a second remote station.

15. An apparatus for transmitting wideband speech signals over a narrowband communication system, comprising:

a control element located at a base station, wherein the control element is configured to execute a set of instructions stored in a memory element, the set of instructions for:

supervising a bandwidth switching filter that generates a narrowband signal from a wideband signal;

supervising the puncturing of the narrowband signal with the wideband signal;

establishing a wideband communication session between the base station and a second base station; and

if the wideband communication session is interrupted, then establishing a narrowband communication session between the base station and the second base station, whereupon the narrowband signal

is punctured with a packetized form of the narrowband signal rather than the wideband signal.

16. An apparatus for transmitting wideband speech signals over a narrowband communication system, comprising:

a control element located at a base station, wherein the control element is configured to execute a set of instructions stored in a memory element, the set of instructions for:

negotiating a call set-up between the base station and an originating base station;

supervising an extraction of a packetized signal from a pulse code modulation (PCM) signal received from the originating base station;

disabling an encoding portion of a vocoder that encodes the PCM signal into a packetized transmission format; and

supervising a transmission of the extracted packetized signal to a target terminal.